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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,516	10/12/2001	David S. Allison	0007056-0203/P5946	3934

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EXAMINER	
ROCHE, TRENTON J	
ART UNIT	**PAPER NUMBER**
2193	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/977,516	ALLISON, DAVID S.	
	Examiner	Art Unit	
	Trenton J. Roche	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,7-9,11,13,15-17,19,21,23-26,28,30,32-34,38,40,42,44 and 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1,3,5,7-9,11,13,15-17,19,21,23-26,28,30,32-34,38,40,42,44 and 45.

DETAILED ACTION

1. This office action is responsive to communications filed 21 October 2005.

2. Per applicant's request, amended claims 1, 3, 5, 7-9, 11, 13, 15-17, 19, 21, 23, 25, 26, 28, 30, 32, 34, 38, 40, 42, 44 and 45 have been entered. Claims 2, 4, 6, 10, 12, 14, 18, 20, 22, 27, 29, 31, 35-37, 39, 41 and 43 have been canceled. Claims 1, 3, 5, 7-9, 11, 13, 15-17, 19, 21, 23-26, 28, 30, 32-34, 38, 40, 42, 44 and 45 are currently pending.

3. Claims 1, 3, 5, 7-9, 11, 13, 15-17, 19, 21, 23-26, 28, 30, 32-34, 38, 40, 42, 44 and 45 have been examined.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 17 and 26 recite the limitation "said object" in lines 7 and 8, respectively. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the claim will be interpreted to read "said first function."

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3, 5, 7-9, 11, 13, 15-17, 19, 21, 23-26, 28, 30, 32-34, 38, 40, 42, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Java!" by Ritchey in view of "Object-Oriented Programming and the Objective-C Language" by NeXT Software, Inc. (hereinafter "NeXT"), further in view of "Using and Porting the GNU Compiler Collection" by Stallman.

Per claim 1:

Ritchey discloses:

- reserving a memory block on a memory structure, the size of said memory block being determined according to said object type, and said memory structure being selected according to said object type (Note pages 134, 135 and 139. The sections describe one example of an object type, the Integer. Further, it is disclosed that a specific amount of memory is allocated depending on the object type, be it integer, long integer, floating-point, etc. "The int type integer is 32 bits long..." on page 139. Further, pages 339-341 disclose when certain memory structures, specifically that of the stack and heap, are selected and used.
- Creating a reference structure to said object (Note page 131, section titled Identifiers, and further, "This statement tells the compiler to create a variable with the name *identifier* of type *type*" on page 138, section titled Declaring Variables. The identifier is the reference structure of the object.)

substantially as claimed. Ritchey does not explicitly disclose the object being written in a dynamically typed language. NeXT discloses the ability to write objects in a dynamically typed language, and discusses advantages of utilizing a dynamically typed language as opposed to a static typed language. (Note section titled "Dynamic Typing" on pages 13 and 14 of Chapter 1 of NeXT). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the dynamic typing ability disclosed by NeXT into the language of Ritchey. NeXT discloses that in a statically typed language, it is impossible to let run-time factors influence the decision about what kind of object should be assigned to a variable, and so the methods executed and the results returned are always fixed. However, dynamically typing the objects would provide the added ability to wait until run time to discover the class of a variable, thereby allowing different versions of methods to be executed and different results to be returned, depending on the class of the receiver, as noted in NeXT on pages 13 and 14 of Chapter 1.

Further, while Ritchey discloses instantiation of functions (pages 168-171, and further, functions are, at their basic core, objects), neither Ritchey nor NeXT specifically disclose a first function comprising a definition of a second function. However, Stallman discloses a number of extensions of the C language family which are available in a dynamically-typed language such as Objective C, one of which is the ability to utilize nested functions to provide a function defined inside another function. ("These extensions are available in C and Objective C." Note section 5, titled "Extensions to the C Language Family." Further, "A nested function is a function defined inside another function" in section 5.4, titled "Nested Functions"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further enhance the language of Ritchey, as modified by NeXT, to further include alternate Objective C extensions such as nested functions, as

this would enable a programmer to have greater control over the visibility of functions and variables, as noted by Stallman in section 5.4, titled "Nested Functions."

Per claim 3:

The rejection of claim 1 is incorporated, and further, Ritchey discloses executing a second of constructor statements if said set contains at least one statement as claimed (Note page 132, section titled Keywords, and the associated table 6.3. *class* is a designated keyword, and further, note pages 172 and 173, section titled Object Creation and Destruction, wherein a class Rectangle is declared which contains a constructor with statements in the constructor which would be executed when the class is instantiated.)

Per claim 5:

The rejection of claim 1 is incorporated, and further, Ritchey discloses a memory structure being a heap as claimed (Note page 341, section titled The Garbage Collected Heap, wherein "The heap is the store of memory from which class instances are allocated")

Per claim 7:

The rejection of claim 1 is incorporated, and further, Ritchey discloses optionally returning a value to a calling statement ("Every method must return a value or be declared as void" on page 168, section titled Methods in Java Classes), deleting said reference structure and freeing said memory block as claimed ("When Java sees there are no more references to an object, it places it on the stack for garbage collection" on page 43, section titled Memory Management and Threads)

Per claim 8:

The rejection of claim 1 is incorporated, and further, Ritchey discloses a memory structure being a stack (Note page 339, section titled The Java Stack)

Per claims 9, 11, 13, 15 and 16:

Claims 9, 11, 13, 15 and 16 are directed to a computer program product for performing the method of claims 1, 3, 5, 7 and 8, respectively, and are rejected for the reasons set forth in connection with claims 1, 3, 5, 7 and 8, respectively.

Per claim 17:

Note the rejection regarding claim 1. In Java, the interpreter is what inherently determines object types, which in turn calls the inherent storage allocation subsystem for controlling memory allocation, and the system inherently includes an access control subsystem for accessing the identifier reference structure.

Per claim 19:

The rejection of claim 17 is incorporated, and further, Ritchey discloses a statement execution subsystem, said execution subsystem configured so as to automatically execute a set of constructor statements as claimed (Note the rejection regarding claim 3)

Per claim 21:

The rejection of claim 17 is incorporated, and further, note the rejection regarding claim 5.

Per claims 23:

The rejection of claim 19 is incorporated, and further, note the rejection regarding claim 7.

Per claim 24:

The rejection of claim 23 is incorporated, and further, note the rejection regarding claim 7. Further, note page 341, section titled The Garbage Collected Heap. The garbage collection is done automatically in Java, and after the statements in the constructor have been executed, the memory used by the constructor class would be automatically deleted.

Per claim 25:

The rejection of claim 17 is incorporated, and further, note the rejection regarding claim 8.

Per claims 26, 28, 30 and 32-34:

Claims 26, 28, 30 and 32-34 are directed to an object instantiation component for performing the steps of the system disclosed in claims 17, 19, 21 and 23-25, respectively, and are rejected for the reasons set forth in connection with claims 17, 19, 21 and 23-25, respectively.

Per claim 38, 40, 42, 44 and 45:

Claims 38, 40, 42, 44 and 45 are rejected for the reasons set forth in connection with claims 1, 3, 5, 7 and 8, respectively.

Response to Arguments

9. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- "User-level Functions in Omega", discloses a JAVA based language with the capability of nested functions.
- U.S. Patent 6,857,118 to Karr et al., discloses a language including nested functions in col. 6 lines 45-46.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trenton J. Roche whose telephone number is (571) 272-3733. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trenton J Roche
Examiner
Art Unit 2193

TJR

WEI ZHEN
SUPERVISORY PATENT EXAMINER